CANCER LETTERS
An international journal providing a forum for original and pertinent contributions in cancer research

TABLE OF CONTENTS

- Description p.1
- Audience p.1
- Abstracting and Indexing p.1
- Editorial Board p.2
- Guide for Authors p.4

DESCRIPTION

Cancer Letters is an international journal that considers full-length articles and Mini Reviews in the broad area of basic and translational oncology. Additionally, Special Issues highlight topical areas in cancer research. Basic areas of interest to a broad readership of Cancer Letters include the molecular genetics and cell biology of cancer, radiation biology, molecular pathology, hormones and cancer, viral oncology, metastasis, and chemoprevention. The journal places emphasis on experimental therapeutics, particularly targeted therapies for personalized cancer medicine, including metronomic chemotherapy.

Benefits to authors
We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our author services.

Please see our Guide for Authors for information on article submission. If you require any further information or help, please visit our support pages: https://service.elsevier.com.

AUDIENCE

Cancer researchers, toxicologists, pathologists, endocrinologists, virologists, molecular, cell and tumor biologists, radiotherapists, epidemiologists.

ABSTRACTING AND INDEXING

BIOSIS Citation Index
Chemical Abstracts
Current Contents - Life Sciences
Embase
PubMed/Medline
Oncology Information Service
Pascal Francis
Scopus

ISSN: 0304-3835
EDITORIAL BOARD

Editor-in-Chief
Manfred Schwab, German Cancer Research Center, Heidelberg, Germany

Deputy Editor
Min Li, The University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma, United States of America

Associate Editor
Toshikazu Ushijima, Hoshi University, Shinagawa-Ku, Japan

Editorial Board
Sanjeevani Arora, Fox Chase Cancer Center, Philadelphia, Pennsylvania, United States of America
Osnat Ashur-Fabian, Tel Aviv University, Tel Aviv, Israel
Maria Blanco-Prieto, University of Navarra, Pamplona, Spain
Christine Brainson, University of Kentucky, Department of Toxicology and Cancer Biology, Lexington, Kentucky, United States of America
Dan Caccire Castillo-Tong, Medical University of Vienna Molecular Oncology Group, Wien, Austria
Andrew Chan, The Chinese University of Hong Kong, Shatin, Hong Kong
Hongwu Chen, University of California Davis Medical Center, Sacramento, California, United States of America
Chee Wai Chua, Shanghai Jiao Tong University School of Medicine Affiliated Renji Hospital, Shanghai, China
Xiaoqun Dong, Brown University Warren Alpert Medical School, Providence, Rhode Island, United States of America
Yan Dong, Tulane University School of Medicine, New Orleans, Louisiana, United States of America
Deilson El gui de Oliveira, São Paulo State University - Botucatu Campus, BOTUCATU, Brazil
Michael Freeman, Vanderbilt University Medical Center, Nashville, Tennessee, United States of America
Dong Gao, Chinese Academy of Sciences, Shanghai Institute of Biochemistry and Cell Biology, Shanghai, China
Alexandros Georgakilas, East Carolina University, Greenville, North Carolina, United States of America
Clemens Oliver Hanemann, Plymouth University Peninsula School of Medicine, Plymouth, United Kingdom
Hongbo Hu, Sichuan University, Chengdu, Sichuan, China
Chiung-Kuei Huang, Tulane University School of Medicine, New Orleans, Louisiana, United States of America
Pintong Huang, Zhejiang University School of Medicine, Hangzhou, China
Evgeny Imyanitov, FSBI National Medical Research Center of Oncology named after N N Petrov of the Ministry of Health of the Russian Federation, Sankt Peterburg, Russian Federation
Levon Khachigian, University of New South Wales, Sydney, New South Wales, Australia
Shihuan Kuan, Purdue University, West Lafayette, Indiana, United States of America
Rakesh Kumar, Swami Rama Himalayan University Cancer Research Institute, Chappersher Afganpur, Uttarakhand, India
Guideng Li, Suzhou, China
Wei Li, The University of Tennessee Health Science Center, Memphis, Tennessee, United States of America
Zhihua Liu, Cancer Hospital Chinese Academy of Medical Sciences, Chaoyang District, China
Hui-Wen Lo, Wake Forest University School of Medicine, Winston-Salem, North Carolina, United States of America
Xiao-Jie Lu, Nanjing Medical University, Nanjing, China
Yong Lu, Houston Methodist Academic Institute, Houston, Texas, United States of America
Irina R. Matei, Weill Cornell Medicine, New York, New York, United States of America
Maria Paola Paronetto, Italian University of Sport and Movement Rome, Roma, Italy
Shyam Patel, University of Massachusetts Chan Medical School, Worcester, Massachusetts, United States of America
Yong Peng, West China Hospital of Sichuan University, Chengdu, China
Suhkneung Pyo, Sungkyunkwan University School of Pharmacy, Suwon, South Korea
Fujun Qin, Zhengzhou University, Zhengzhou, China
Pranela Rameshwar, Rutgers New Jersey Medical School, Newark, New Jersey, United States of America
Gangadhara R. Sareddy, The University of Texas Health Science Center at San Antonio, San Antonio, Texas, United States of America
Gautam Sethi, National University of Singapore, Department of Pharmacy, Singapore, Singapore
Seema Singh, University of South Alabama, Mobile, Alabama, United States of America
Yong-Sang Song, Seoul National University College of Medicine, Seoul, South Korea
Sanjay Srivastava, Texas Tech University Health Sciences Center, Department of Immunotherapeutics and Biotechnology, Abilene, Texas, United States of America
Young-Joon Surh, Seoul National University College of Pharmacy, Seoul, South Korea
David Symer, The University of Texas MD Anderson Cancer Center, Houston, Texas, United States of America
Yongguang Tao, Central South University, Changsha, China
Nina E. E. Tarnitz-Parker, Curtin University Curtin Health Innovation Research Institute, Perth, Australia
Gerald Verhaegh, Radboud University, Nijmegen, Netherlands
Robert C.A.M. van Waardenburg, The University of Alabama at Birmingham, Birmingham, Alabama, United States of America
Kai Wang, Zhejiang University Library, Hangzhou, China
Yuan Wang, West China Hospital of Sichuan University, Chengdu, China
Deborah White, South Australian Health and Medical Research Institute Limited, Adelaide, South Australia, Australia
Xiao Xu, Hangzhou First People's Hospital, Hangzhou, China
Eddy Yang, The University of Alabama at Birmingham, Birmingham, Alabama, United States of America
Shyng-Shiou Yuan, Kaohsiung Medical University, Kaohsiung, Taiwan
Andrey Zamyatnin, I M Sechenov First Moscow State Medical University, Moskva, Russian Federation
Hao Zhang, Jinan University School of Medicine, Guangzhou, Guangdong, China
Junran Zhang, The Ohio State University Wexner Medical Center, Department of Neurosurgery, Columbus, Ohio, United States of America
Fanghui Zhao, Cancer Hospital Chinese Academy of Medical Sciences, Beijing, China
Guoguang Zheng, Chinese Academy of Medical Sciences Institute of Hematology and Blood Diseases Hospital, Tianjin, China
Shengtao Zhou, Sichuan University West China Second University Hospital, Chengdu, China

Editorial Board (Shanghai and Tianjin Editorial Offices)
Ceshi Chen, Kunming Institute of Zoology Chinese Academy of Sciences, Kunming, China
Jing Fang, Qingdao University Cancer Institute, Qingdao, China
Xiaomao Guo, Shanghai Medical Instrumentation College, Shanghai, China
He Ren, The Affiliated Hospital of Qingdao University, Qingdao, China
Hong-Yang Wang, Eastern Hepatobiliary Surgery Hospital, Shanghai, China
Xianjun Yu, Fudan University Shanghai Cancer Center, Shanghai, China
Your Paper Your Way
We now differentiate between the requirements for new and revised submissions. You may choose to submit your manuscript as a single Word or PDF file to be used in the refereeing process. Only when your paper is at the revision stage, will you be requested to put your paper in to a 'correct format' for acceptance and provide the items required for the publication of your article.
To find out more, please visit the Preparation section below.

Types of Article
Cancer Letters is an international journal that considers full length articles and Mini Reviews in the broad area of basic and translational oncology. Additionally, special issues highlight topical areas in cancer research. Areas of interest to the broad readership of Cancer Letters include the molecular genetics and cell biology of cancer, radiation biology, molecular pathology, hormones and cancer, viral oncology, metastasis, chemoprevention and targeted therapies for personalized cancer medicine. Noncoding RNA (ncRNA) and its role in different types of human cancer has been a highlight topic for Cancer Letters over the past years, manuscripts in this area are particularly welcome.

Mini Reviews
Authors of Mini Reviews must be an authority for the topic of the manuscript. This should be documented in the Cover Letter by listing, with full citations, your own previous relevant original manuscripts directly related to the topic of your Mini Review. Previous own Review articles should not be listed. Own relevant original publications should not be older than 3 years.
*Please avoid listing your publications not directly related to the topic of your submitted Mini Review.
*Please do not list all of your publications, only those that are directly related to the topic of the Mini Review.
*Text of the Mini Review should not exceed about 5000 words (not counting References), number of references should not be more than 100.
*For manuscript design we suggest to inspect Cancer Letters Mini Reviews previously published by other authors.

Cancer Letters operates a single blind review process. All original papers should be between 3000 and 3500 words and will be initially assessed by the Editors for suitability for the journal. Papers deemed suitable are then sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. More information on types of peer review.

The Editorial Office has adopted a rating system, in order to establish which manuscripts will be sent out for peer review. The rating system allows the Editor to assess the manuscript in terms of the following criteria:

* Presentation
* Style and structure
* Quality of English language
* Whether the topic being covered is within the aims and scope of the journal
* The manuscript's scientific novelty together with how it compares to other manuscripts submitted on similar topics.

Those manuscripts which are judged as being eligible for consideration by the Editors will be subject to peer review.

Prior Publication
The submitted material must not be published nor submitted elsewhere, except in abstract form

Page charges
This journal has no page charges.

Submission Checklist
You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

Ensure that the following items are present:
One author has been designated as the corresponding author with contact details:
• E-mail address
• Full postal address

All necessary files have been uploaded:

**Manuscript:**
• Include keywords
• All figures (include relevant captions)
• All tables (including titles, description, footnotes)
• Ensure all figure and table citations in the text match the files provided
• Indicate clearly if color should be used for any figures in print

**Graphical Abstracts / Highlights files** (where applicable)

**Supplemental files** (where applicable)

Further considerations:
• Manuscript has been 'spell checked' and 'grammar checked' and meets a level of English proficiency consistent with English-language journals
• All references mentioned in the Reference List are cited in the text, and vice versa
• Permission has been obtained for use of copyrighted material from other sources (including the Internet)
• Relevant declarations of interest have been made
• Journal policies detailed in this guide have been reviewed
• Referee suggestions and contact details provided, based on journal requirements

For further information, visit our Support Center.

**BEFORE YOU BEGIN**

*Ethics in publishing*
Please see our information on *Ethics in publishing*.

*Ethics and Procedures*
The editors and publisher of this Journal believe that there are fundamental principles underlying scholarly or professional publishing. While this may not amount to a formal "code of conduct", these fundamental principles with respect to the authors' paper are that the paper should:
* be the authors' own original work, which has not been previously published elsewhere
* reflect the authors' own research and analysis and do so in a truthful and complete manner,
* properly credit the meaningful contributions of co-authors and co-researchers,
* not be submitted to more than one journal for consideration (ensuring it is not under redundant simultaneous peer review), and
* be appropriately placed in the context of prior and existing research.

Of equal importance are ethical guidelines dealing with research methods and research funding, including issues dealing with informed consent, research subject privacy rights, conflicts of interest, and sources of funding. While it may not be possible to draft a "code" that applies adequately to all instances and circumstances, we believe it useful to outline our expectations of authors and procedures that the Journal will employ in the event of questions concerning author conduct. Relevant conflicts of interest should be disclosed (see https://www.elsevier.com/conflictsofinterest).

Studies involving experiments with animals must state that their care was in accordance with institutional guidelines.

*Studies in humans and animals*
If the work involves the use of human subjects, the author should ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans. The manuscript should be in line with the Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals and aim for the inclusion of representative human populations (sex, age and ethnicity) as per those recommendations. The terms sex and gender should be used correctly.
Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.

All animal experiments should comply with the ARRIVE guidelines and should be carried out in accordance with the U.K. Animals (Scientific Procedures) Act, 1986 and associated guidelines, EU Directive 2010/63/EU for animal experiments, or the National Research Council's Guide for the Care and Use of Laboratory Animals and the authors should clearly indicate in the manuscript that such guidelines have been followed. The sex of animals must be indicated, and where appropriate, the influence (or association) of sex on the results of the study.

Work on human beings that is submitted to Cancer Letters should comply with the principles laid down in the Declaration of Helsinki; Recommendations guiding physicians in biomedical research involving human subjects. Adopted by the 18th World Medical Assembly, Helsinki, Finland, June 1964, amended by the 29th World Medical Assembly, Tokyo, Japan, October 1975, the 35th World Medical Assembly, Venice, Italy, October 1983, and the 41st World Medical Assembly, Hong Kong, September 1989. The manuscript should contain a statement that the work has been approved by the appropriate ethical committees related to the institution(s) in which it was performed and that subjects gave informed consent to the work. Studies involving experiments with animals must state that their care was in accordance with institution guidelines. Patients' and volunteers' names, initials, and hospital numbers should not be used.

Guidelines for Formatting Gene and Protein Names
Please refer to the following Guidelines to ensure correct formatting for Gene and Protein Names.

Reliability of results based on cultivated animal and human cells
Authors must state in their manuscript how the identity of the cell line was confirmed.

Informed consent and patient details
Studies on patients or volunteers require ethics committee approval and informed consent, which should be documented in the paper. Appropriate consents, permissions and releases must be obtained where an author wishes to include case details or other personal information or images of patients and any other individuals in an Elsevier publication. Written consents must be retained by the author but copies should not be provided to the journal. Only if specifically requested by the journal in exceptional circumstances (for example if a legal issue arises) the author must provide copies of the consents or evidence that such consents have been obtained. For more information, please review the Elsevier Policy on the Use of Images or Personal Information of Patients or other Individuals. Unless you have written permission from the patient (or, where applicable, the next of kin), the personal details of any patient included in any part of the article and in any supplementary materials (including all illustrations and videos) must be removed before submission.

Declaration of competing interest
Corresponding authors, on behalf of all the authors of a submission, must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. All authors, including those without competing interests to declare, should provide the relevant information to the corresponding author (which, where relevant, may specify they have nothing to declare). Corresponding authors should then use this tool to create a shared statement and upload to the submission system at the Attach Files step. Please do not convert the .docx template to another file type. Author signatures are not required.

Declaration of generative AI in scientific writing
The below guidance only refers to the writing process, and not to the use of AI tools to analyse and draw insights from data as part of the research process.

Where authors use generative artificial intelligence (AI) and AI-assisted technologies in the writing process, authors should only use these technologies to improve readability and language. Applying the technology should be done with human oversight and control, and authors should carefully review and edit the result, as AI can generate authoritative-sounding output that can be incorrect, incomplete or
biased. AI and AI-assisted technologies should not be listed as an author or co-author, or be cited as an author. Authorship implies responsibilities and tasks that can only be attributed to and performed by humans, as outlined in Elsevier’s AI policy for authors.

Authors should disclose in their manuscript the use of AI and AI-assisted technologies in the writing process by following the instructions below. A statement will appear in the published work. Please note that authors are ultimately responsible and accountable for the contents of the work.

Disclosure instructions
Authors must disclose the use of generative AI and AI-assisted technologies in the writing process by adding a statement at the end of their manuscript in the core manuscript file, before the References list. The statement should be placed in a new section entitled ‘Declaration of Generative AI and AI-assisted technologies in the writing process’.

Statement: During the preparation of this work the author(s) used [NAME TOOL / SERVICE] in order to [REASON]. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication.

This declaration does not apply to the use of basic tools for checking grammar, spelling, references etc. If there is nothing to disclose, there is no need to add a statement.

Submission of Manuscripts
Manuscripts should be submitted online at https://www.editorialmanager.com/CANLET/default.aspx and the instructions on the site should be closely followed. Authors may submit manuscripts and track their progress through to final decision.

Authors unable to submit online should contact the Editorial Office:

Cancer Letters Editorial Office
Elsevier Ltd
The Boulevard
Langford Lane
Oxford OX5 1GB
U.K.
Tel : +44 (0)1865 843203
Fax : +44 (0)1865 843992
Email : cancerletters@elsevier.com

Submission of an article to Cancer Letters implies that the work described has not been published previously (except in the form of an abstract or as part of a published lecture or academic thesis), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or any other language, without the written consent of the Publisher.

Manuscripts should be submitted in English. Authors' full names, academic or professional affiliations, and addresses should be included on the first page. All authors should have made substantial contributions to all of the following: (1) the conception and design of the study, or the acquisition of data, or analysis and interpretation of data, (2) drafting the article or revising it critically for important intellectual content, (3) final approval of the version to be submitted. The name, postal address, email address and phone number of the corresponding author should be provided. Authors should supply the names, institutional mailing address and institutional email addresses of 5 potential reviewers for their manuscript and indicate why each reviewer would be competent for reviewing the manuscript. To provide an international perspective, no more than 2 potential reviewers should be from the same country. Please do not suggest reviewers from your own institution, previous or current collaborators or Editorial Board members. Please do not contact any reviewers that you have suggested. Without reviewer suggestions, processing of the manuscript may be delayed. Note that the editor retains the sole right to decide whether or not the suggested reviewers are used. For more details, visit our Support site.
Online submission guidelines can be followed at https://www.editorialmanager.com/CANLET/default.aspx. Via this website you will be guided stepwise through the creation and uploading of the various files. The system automatically converts source files into a single Adobe Acrobat PDF version of the article, which is used in the peer review process. Please note that although manuscript source files are converted to PDF at submission for the review process, these source files are needed for further processing after acceptance. All correspondence, including notification of the Editor's decision and requests for revision, takes place by email and via the author's homepage, removing the need for a hard-copy paper trail.

**Submission declaration and verification**
Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, see 'Multiple, redundant or concurrent publication' for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify compliance, your article may be checked by Crossref Similarity Check and other originality or duplicate checking software.

**Preprints**
Please note that preprints can be shared anywhere at any time, in line with Elsevier's sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see 'Multiple, redundant or concurrent publication' for more information).

**Use of inclusive language**
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Content should make no assumptions about the beliefs or commitments of any reader; contain nothing which might imply that one individual is superior to another on the grounds of age, gender, race, ethnicity, culture, sexual orientation, disability or health condition; and use inclusive language throughout. Authors should ensure that writing is free from bias, stereotypes, slang, reference to dominant culture and/or cultural assumptions. We advise to seek gender neutrality by using plural nouns ("clinicians, patients/clients") as default/wherever possible to avoid using "he, she," or "he/she." We recommend avoiding the use of descriptors that refer to personal attributes such as age, gender, race, ethnicity, culture, sexual orientation, disability or health condition unless they are relevant and valid. When coding terminology is used, we recommend to avoid offensive or exclusionary terms such as "master", "slave", "blacklist" and "whitelist". We suggest using alternatives that are more appropriate and (self-) explanatory such as "primary", "secondary", "blocklist" and "allowlist". These guidelines are meant as a point of reference to help identify appropriate language but are by no means exhaustive or definitive.

**Reporting sex- and gender-based analyses**

**Reporting guidance**
For research involving or pertaining to humans, animals or eukaryotic cells, investigators should integrate sex and gender-based analyses (SGBA) into their research design according to funder/sponsor requirements and best practices within a field. Authors should address the sex and/or gender dimensions of their research in their article. In cases where they cannot, they should discuss this as a limitation to their research's generalizability. Importantly, authors should explicitly state what definitions of sex and/or gender they are applying to enhance the precision, rigor and reproducibility of their research and to avoid ambiguity or conflation of terms and the constructs to which they refer (see Definitions section below). Authors can refer to the Sex and Gender Equity in Research (SAGER) guidelines and the SAGER guidelines checklist. These offer systematic approaches to the use and editorial review of sex and gender information in study design, data analysis, outcome reporting and research interpretation - however, please note there is no single, universally agreed-upon set of guidelines for defining sex and gender.

**Definitions**
Sex generally refers to a set of biological attributes that are associated with physical and physiological features (e.g., chromosomal genotype, hormonal levels, internal and external anatomy). A binary sex categorization (male/female) is usually designated at birth ("sex assigned at birth"), most often based solely on the visible external anatomy of a newborn. Gender generally refers to socially constructed roles, behaviors, and identities of women, men and gender-diverse people that occur in a historical and cultural context and may vary across societies and over time. Gender influences how people view
themselves and each other, how they behave and interact and how power is distributed in society. Sex and gender are often incorrectly portrayed as binary (female/male or woman/man) and unchanging whereas these constructs actually exist along a spectrum and include additional sex categorizations and gender identities such as people who are intersex/have differences of sex development (DSD) or identify as non-binary. Moreover, the terms "sex" and "gender" can be ambiguous—thus it is important for authors to define the manner in which they are used. In addition to this definition guidance and the SAGER guidelines, the resources on this page offer further insight around sex and gender in research studies.

**Author contributions**

For transparency, we require corresponding authors to provide co-author contributions to the manuscript using the relevant CRediT roles. The CRediT taxonomy includes 14 different roles describing each contributor’s specific contribution to the scholarly output. The roles are: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; and Writing - review & editing. Note that not all roles may apply to every manuscript, and authors may have contributed through multiple roles. More details and an example.

**Article transfer service**

This journal uses the Elsevier Article Transfer Service to find the best home for your manuscript. This means that if an editor feels your manuscript is more suitable for an alternative journal, you might be asked to consider transferring the manuscript to such a journal. The recommendation might be provided by a Journal Editor, a dedicated Scientific Managing Editor, a tool assisted recommendation, or a combination. If you agree, your manuscript will be transferred, though you will have the opportunity to make changes to the manuscript before the submission is complete. Please note that your manuscript will be independently reviewed by the new journal. More information.

**Copyright**

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

For gold open access articles: Upon acceptance of an article, authors will be asked to complete a 'License Agreement’ (more information). Permitted third party reuse of gold open access articles is determined by the author's choice of user license.

**Author rights**

As an author you (or your employer or institution) have certain rights to reuse your work. More information.

Elsevier supports responsible sharing

Find out how you can share your research published in Elsevier journals.

**Role of the funding source**

You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement, it is recommended to state this.

**Open access**

Please visit our Open Access page for more information.
Elsevier Researcher Academy

Researcher Academy is a free e-learning platform designed to support early and mid-career researchers throughout their research journey. The "Learn" environment at Researcher Academy offers several interactive modules, webinars, downloadable guides and resources to guide you through the process of writing for research and going through peer review. Feel free to use these free resources to improve your submission and navigate the publication process with ease.

Language (usage and editing services)

Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's WebShop https://webshop.elsevier.com/language-editing-services/language-editing/ or visit our customer support site https://service.elsevier.com for more information. Authors should be aware that papers written in poor English are more likely to be rejected.

Submission

Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Submit your article

Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's WebShop. Please note the journal also offers complimentary language editing at the discretion of the editor.

Reviewer Suggestions

Authors should supply the names and institutional email addresses of 5 potential reviewers for their manuscript and indicate why each reviewer would be competent for reviewing the manuscript. To provide an international perspective, no more than 2 potential reviewers should be from the same country. Please do not suggest reviewers from your own institution, previous or current collaborators or Editorial Board members. Please do not contact any reviewers that you have suggested. Without reviewer suggestions, processing of the manuscript may be delayed. Note that the editor retains the sole right to decide whether or not the suggested reviewers are used. For more details, visit our Support site.

PREPARATION

Preparation of Manuscript

Please strive for a professionally prepared manuscript of high technical and scientific quality. Many reviewers are overwhelmed with review requests. Our experience is that they are more likely to agree to review a well prepared manuscript.

Articles should be submitted in the following order : Title, Abstract, Introduction, Materials and Methods, Results, Discussion, Acknowledgements, References.

Please number the headings in your manuscript as follows:
1. Introduction; 2. Materials and methods; 3. Results; 4. Discussion, etc.; with further numbering for subheadings (e.g. 1.1, 1.2, etc) as required.

Title must address the main result of the study and preferably not exceed 185 characters, including spaces. Excessive words such as 'study' 'investigation', 'analysis', etc, should be avoided.

Acknowledgements. All contributors who do not meet the criteria for authorship as defined above should be listed in an acknowledgements section. Examples of those who might be acknowledged include a person who provided purely technical help, writing assistance, or a departmental chair who provided only general support. Authors should disclose whether they had any writing assistance and identify the entity that paid for that assistance.
**Cover Letter**

Manuscript submissions must be accompanied by a cover letter on institute letterhead with complete institute or laboratory coordinates: Official institute/laboratory name at research institution/university, full postal address, with phone and official institute/laboratory email of corresponding author. Personal email, both on cover letter and also on manuscript, will not be accepted. Academic role of corresponding author at the institution must be identified (Professor, Associate/Assistant Professor; Head of Laboratory). The cover letter should outline the significance of the results in no more than 5 sentences. Only submissions following these requests will be considered.

**NEW SUBMISSIONS**

Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts your files to a single PDF file, which is used in the peer-review process. As part of the Your Paper Your Way service, you may choose to submit your manuscript as a single file to be used in the refereeing process. This can be a PDF file or a Word document, in any format or layout that can be used by referees to evaluate your manuscript. It should contain high enough quality figures for refereeing. If you prefer to do so, you may still provide all or some of the source files at the initial submission. Please note that individual figure files larger than 10 MB must be uploaded separately.

**References**

There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct.

**Formatting requirements**

There are no strict formatting requirements but all manuscripts must contain the essential elements needed to convey your manuscript, for example Abstract, Keywords, Introduction, Materials and Methods, Results, Conclusions, Artwork and Tables with Captions.

If your article includes any Videos and/or other Supplementary material, this should be included in your initial submission for peer review purposes. Divide the article into clearly defined sections.

**Figures and tables embedded in text**

Please ensure the figures and the tables included in the single file are placed next to the relevant text in the manuscript, rather than at the bottom or the top of the file. The corresponding caption should be placed directly below the figure or table.

**REVISED SUBMISSIONS**

**Use of word processing software**

Regardless of the file format of the original submission, at revision you must provide us with an editable file of the entire article. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). See also the section on Electronic artwork.

To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

**Essential title page information**

- **Title.** Concise and informative. Titles are often used in information-retrieval systems and careful thought should be given to them. Titles should be informative, they should present the main result(s), best will be to design the title as a take-home message. Avoid abbreviations and formulae where possible and avoid addressing simply what you have done, such as "Profiling of?.", "Analysis of?.", also "Effect of.", "Role of.", "Correlation of.", "Association of.", "Modulation of.", or titles with a question mark.
- **Author names and affiliations.** Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. You can add your name between parentheses in your own script behind the English transliteration. Present the authors' affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lower-
case superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.

- **Corresponding author.** Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. This responsibility includes answering any future queries about Methodology and Materials. **Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.**

  **Note - in some instances, such as ethical investigations or corrigenda, the Editorial Team may ask for all authors' contact details. It will be the responsibility of the corresponding author to provide this information and ensure it is correct and up to date.**

- **Present/permanent address.** If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

Note: If there is more than one corresponding author, please mention the main corresponding author and followed by additional corresponding authors in the Title page

**Twitter handle.** If you would like your Twitter handle to be included on your published paper, please provide it on your title page.

**Highlights**

Highlights are mandatory for this journal as they help increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research as well as new methods that were used during the study (if any). Please have a look at the examples here: example Highlights.

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).

**Abstract**

A concise and factual abstract is required not exceeding 185 words. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

**Keywords**

Immediately after the abstract, provide a maximum of 5 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes, therefore please try to avoid duplicating words which have already appeared in the title of the paper.

**Abbreviations**

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

**Acknowledgements**

All contributors who do not meet the criteria for authorship as defined above should be listed in an acknowledgements section at the end of the article before the references. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

**Formatting of funding sources**

List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].
It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, it is recommended to include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Footnotes**

Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article.

**Artwork**

**Electronic artwork**

**General points**

- Make sure you use uniform lettering and sizing of your original artwork.
- Preferred fonts: Arial (or Helvetica), Times New Roman (or Times), Symbol, Courier.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Indicate per figure if it is a single, 1.5 or 2-column fitting image.
- For Word submissions only, you may still provide figures and their captions, and tables within a single file at the revision stage.
- Please note that individual figure files larger than 10 MB must be provided in separate source files.

A detailed guide on electronic artwork is available.

**You are urged to visit this site; some excerpts from the detailed information are given here.**

**Formats**

Regardless of the application used, when your electronic artwork is finalized, please 'save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

- EPS (or PDF): Vector drawings. Embed the font or save the text as 'graphics'.
- TIFF (or JPEG): Color or grayscale photographs (halftones): always use a minimum of 300 dpi.
- TIFF (or JPEG): Bitmapped line drawings: use a minimum of 1000 dpi.
- TIFF (or JPEG): Combinations bitmapped line/half-tone (color or grayscale): a minimum of 500 dpi is required.

**Please do not:**

- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); the resolution is too low.
- Supply files that are too low in resolution.
- Submit graphics that are disproportionately large for the content.

**Color artwork**

Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF) or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) in addition to color reproduction in print. Further information on the preparation of electronic artwork.

**Figure captions**

Ensure that each illustration has a caption. A caption should comprise a brief title (not on the figure itself) and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

**Tables**

Tables should be typed, with double spacing, each on a separate sheet, numbered consecutively with Roman numerals, and should only contain horizontal lines. A short descriptive heading should be given above each table, and any footnotes and explanations underneath.
Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.


Preprint references
Where a preprint has subsequently become available as a peer-reviewed publication, the formal publication should be used as the reference. If there are preprints that are central to your work or that cover crucial developments in the topic, but are not yet formally published, these may be referenced. Preprints should be clearly marked as such, for example by including the word preprint, or the name of the preprint server, as part of the reference. The preprint DOI should also be provided.

Reference management software
Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley. Using citation plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal's style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. More information on how to remove field codes from different reference management software.

Reference formatting
There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples:

Please ensure to provide the complete author names in reference list. The journal style will be applied at proof stage.

Journal abbreviations source
Journal names should be abbreviated according to the List of Title Word Abbreviations.

Video
Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labeled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. Please supply 'still' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalize the link to your video data. For more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

Data visualization
Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions here to find out about available data visualization options and how to include them with your article.
**Supplementary material**
Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

Note: If 'Editing services' or 'Language editing certificate' is required, please ensure to submit under 'additional files' in Editorial Manager. Do not upload under supplementary files as this would appear online.

**Research data**
This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings, which may also include software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

**Data linking**
If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.

For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

**Research Elements**
This journal enables you to publish research objects related to your original research – such as data, methods, protocols, software and hardware – as an additional paper in a Research Elements journal.

Research Elements is a suite of peer-reviewed, open access journals which make your research objects findable, accessible and reusable. Articles place research objects into context by providing detailed descriptions of objects and their application, and linking to the associated original research articles. Research Elements articles can be prepared by you, or by one of your collaborators.

During submission, you will be alerted to the opportunity to prepare and submit a manuscript to one of the Research Elements journals.

More information can be found on the Research Elements page.

**Data statement**
To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.
AFTER ACCEPTANCE

Online proof correction
To ensure a fast publication process of the article, we kindly ask authors to provide us with their proof corrections within two days. Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.
If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.
We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

Offprints
The corresponding author will, at no cost, receive a customized Share Link providing 50 days free access to the final published version of the article on ScienceDirect. The Share Link can be used for sharing the article via any communication channel, including email and social media. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Corresponding authors who have published their article gold open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

AUTHOR INQUIRIES
Visit the Elsevier Support Center to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch.
You can also check the status of your submitted article or find out when your accepted article will be published.

© Copyright 2018 Elsevier | https://www.elsevier.com